

WHAT IS CLAIMED IS:

1. A charge transfer element, comprising:

5 a reverse conductive type semiconductor region formed in one major surface of one conductive type semiconductor substrate;

a channel region of the one conductive type formed in the semiconductor region so as to extend in one direction;

10 a plurality of transfer electrodes formed on the semiconductor substrate so as to intersect the channel region;

a capacitance formed continuous from the channel region in the semiconductor region; and

15 an output transistor having a source and a drain both formed in the semiconductor region, and a gate connected to the capacitance,

wherein

20 the semiconductor region where the output transistor is formed exhibits an dopant density profile in a depth direction of the semiconductor substrate, which has a maximum dopant density value relative to a middle region of the semiconductor region.

25 2. The charge transfer element according to claim 1, wherein dopant density of the semiconductor region where the output transistor is formed is lower in a surface region rather than in the middle region along the depth direction of the semiconductor substrate.

3. The charge transfer element according to claim 1, further comprising:

a load transistor serially connected to the output transistor, and

5 wherein

the load transistor is formed in the semiconductor region where the output transistor is formed.

4. The charge transfer element according to claim 2, further comprising:

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a load transistor serially connected to the output transistor, and

wherein

the load transistor is formed in the semiconductor region

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where the output transistor is formed.